

Application No.: 10/526,323
Filed: February 28, 2005
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Amendments to the Claims:

This claim listing will replace all prior versions and listings of claims in the subject application, and please amend the claims as follows:

WHAT IS CLAIMED IS:

1.-77. (Cancelled)

78. (previously presented) An analog of bacteriocidal peptide microcin J25 (MccJ25) that (1) has an amino acid sequence that differs from that of MccJ25 in terms of at least one amino acid substitution, insertion, or deletion; and (2) that binds a bacterial RNAP and inhibits an activity of bacterial RNAP with a potency at least equal to that of MccJ25.

79. (previously presented) An analog according to claim 78 selected from the group consisting of [Lys₅]MccJ25, [Lys₁₃]MccJ25, [Lys₁₅]MccJ25, and [Lys₁₇]MccJ25.

80. (previously presented) An analog according to claim 78 selected from the group consisting of [X-Lys₅]MccJ25, [X-Lys₁₃]MccJ25, [X-Lys₁₅]MccJ25, and [X-Lys₁₇]MccJ25, where X contains a detectable group.

81. (previously presented) An analog according to claim 80 where the detectable group is selected from the group consisting of a chromophore, fluorophore and Cy3.

82. (previously presented) An analog according to claim 78 that also contains a detectable group.

83. (previously presented) An analog according to claim 82 where the detectable group is selected from the group consisting of a chromophore, fluorophore and Cy3.

84. (previously presented) A method for identifying an agent that binds to a bacterial RNAP homologous secondary channel amino acid sequence in a first entity, comprising the steps of: (a) preparing a reaction solution including the agent to be tested and a first entity including a bacterial RNAP homologous secondary channel amino acid sequence; and (b) detecting at least one of the presence, extent, concentration-dependence, or kinetics of binding of the agent to the bacterial RNAP homologous secondary channel amino acid sequence.

85. (currently amended) The method of claim 84 wherein the first entity is selected from the group consisting of an intact bacterial RNAP or and a fragment of a bacterial RNAP thereof.

86. (currently amended) The method of claim 84 wherein the first entity is selected from the group consisting of a derivative of *Escherichia coli* RNAP or and a derivative of *Bacillus subtilis* RNAP.

87. (previously presented) The method of claim 84 further comprising comparison of: (a) the binding of the agent to the first entity; and (b) the binding of the agent to a second entity that contains a derivative of a bacterial RNAP homologous secondary channel amino acid having at least one substitution, insertion, or deletion.

88. (currently amended) The method of claim 87 wherein the second entity is selected from the group consisting of a derivative of an intact bacterial RNAP or and a fragment thereof of a bacterial RNAP.

89. (currently amended) The method of claim 87 wherein the first second entity is selected from the group consisting of a derivative of *Escherichia coli* RNAP or and a derivative of *Bacillus subtilis* RNAP.

90. (currently amended) The method of claim 87 84 further comprising comparison of: (a) at least one of the presence, extent, concentration-dependence, or kinetics of binding of the agent to the first entity; and (b) at least one of the presence, extent, concentration-dependence, or kinetics of binding of the agent to a eukaryotic RNAP derivative.

91. (previously presented) The method of claim 90 wherein the eukaryotic RNAP derivative is selected from the group consisting of a human RNAP derivative and a human RNAP II derivative.

92. (currently amended) The method of claim 90 84 further comprising comparison of: (a) at least one of the presence, extent, concentration-dependence, or kinetics of binding of the agent to the first entity; and (b) at least one of the presence, extent, concentration-dependence, or kinetics of binding of MccJ25 to the first entity.

93. (previously presented) A method for identifying an agent that inhibits an activity of a bacterial RNAP by binding to a bacterial RNAP homologous secondary channel amino acid sequence, comprising: (a) preparing a reaction solution comprising the agent to be tested and a first entity containing a bacterial RNAP homologous secondary channel amino acid sequence; and (b) detecting the at least one of the presence, extent, concentration-dependence, or kinetics of inhibition of an activity of said first entity, wherein inhibition involves binding of the agent to the homologous bacterial RNAP secondary channel amino acid sequence.

94. (currently amended) The method of claim 93 wherein the first entity is selected from the group consisting of an intact bacterial RNAP or and a fragment of a bacterial RNAP thereof.

95. (currently amended) The method of claim 93 wherein the first entity is selected from the group consisting of a derivative of *Escherichia coli* RNAP or and a derivative of *Bacillus subtilis* RNAP.

96. (currently amended) The method of claim 93 wherein the activity is selected from the group consisting of RNA synthesis, NTP uptake, pyrophosphate release, abortive-RNA release, edited-RNA release, transcriptional pausing, transcriptional arrest, and Gre-factor binding.

97. (previously presented) The method of claim 93 further comprising comparison of: (a) at least one of the presence, extent, concentration-dependence, or kinetics of the inhibition by the agent of an activity of the first entity; and (b) at least one of the presence, extent, concentration-dependence, or kinetics of the inhibition by the agent of an activity of a second entity that contains a derivative of a bacterial RNAP homologous secondary channel amino acid having at least one substitution, insertion, or deletion.

98. (New) The method of claim 97, wherein the second entity is selected from the group consisting of an intact bacterial RNAP and a fragment of a bacterial RNAP.

99. (New) The method of claim 97, wherein the second entity is selected from the group consisting of a derivative of *Escherichia coli* RNAP and a derivative of *Bacillus subtilis* RNAP.

100. (New) The method of claim 97, wherein the activity is selected from the group consisting of RNA synthesis, NTP uptake, pyrophosphate release, abortive-RNA release, edited-RNA release, transcriptional pausing, transcriptional arrest, and Gre-factor binding.

101. (New) The method of claim 97, further comprising comparison of: (a) at least one of the presence, extent, concentration-dependence, or kinetics of inhibition by the agent of an activity of the first entity; and (b) at least one of the presence, extent, concentration-dependence, or kinetics of inhibition by the agent of an activity of a eukaryotic RNAP derivative.

102. (New) The method of claim 101, wherein the eukaryotic RNAP derivative is selected from the group consisting of a human RNAP derivative and a human RNAP II derivative.

103. (New) The method of claim 93, further comprising comparison of: (a) at least one of the presence, extent, concentration-dependence, or kinetics of inhibition by the agent of an activity of the first entity; and (b) at least one of the presence, extent, concentration-dependence, or kinetics of inhibition by MccJ25 of an activity of the first entity.

104. (New) A method for identifying an agent that binds to a bacterial RNAP homologous secondary channel amino acid sequence, comprising (a) preparing a reaction solution comprising the agent to be tested, a reference compound that binds to a homologous bacterial RNAP secondary channel amino acid sequence, and a first entity containing a bacterial RNAP homologous secondary channel amino acid sequence, and (b) detecting at least one of the presence, extent, concentration-dependence, or kinetics of competition by the agent for binding of the reference compound to the homologous secondary channel amino acid sequence.

105. (New) The method of claim 104, wherein the first entity is selected from the group consisting of an intact bacterial RNAP and a fragment of a bacterial RNAP.

106. (New) The method of claim 104, wherein the first entity is selected from the group consisting of a derivative of *Escherichia coli* RNAP and a derivative of *Bacillus subtilis* RNAP.

107. (New) The method of claim 104, wherein the reference compound contains a detectable group.
108. (New) The method of claim 107, wherein the detectable group contains a chromophore.
109. (New) The method of claim 107, wherein the detectable group contains a fluorophore.
110. (New) The method of claim 104, wherein the reference compound is MccJ25.
111. (New) The method of claim 104, wherein the reference compound is a MccJ25 derivative.
112. (New) The method of claim 104, wherein the reference compound is selected from the group consisting of a chromophore-labelled MccJ25 derivative and a fluorophore-labelled MccJ25 derivative.
113. (New) The method of claim 104, wherein the reference compound is selected from the group consisting of [Cy3-Lys₅]-MccJ25 and [Cy3-Lys₁₃]-MccJ25.
114. (New) The method of claim 104, further comprising measurement of FRET.
115. (New) The method of claim 104, further comprising comparison of: (a) at least one of the presence, extent, concentration-dependence, or kinetics of the binding of the agent to the first entity; and (b) at least one of the presence, extent, concentration-dependence, or kinetics of the binding of the agent to a second entity that contains a derivative of a bacterial RNAP homologous secondary channel amino acid having at least one substitution, insertion, or deletion.

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116. (New) The method of claim 115, wherein the second entity is selected from the group consisting of a derivative of an intact bacterial RNAP and a derivative of a fragment of a bacterial RNAP.

117. (New) The method of claim 115, wherein the second entity is selected from the group consisting of a derivative of *Escherichia coli* RNAP and a derivative of *Bacillus subtilis* RNAP.

118. (New) The method of claim 115, further comprising comparison of: (a) at least one of the presence, extent, concentration-dependence, or kinetics of binding of the agent to the first entity, and (b) at least one of the presence, extent, concentration-dependence, or kinetics of binding of the agent to a eukaryotic RNAP derivative.

119. (New) The method of claim 118, wherein the eukaryotic RNAP derivative is selected from the group consisting of a human RNAP derivative and a human RNAP II derivative.

120. (New) The method of claim 104, further comprising comparison of: (a) at least one of the presence, extent, concentration-dependence, or kinetics of binding of the agent to the first entity; and (b) at least one of the presence, extent, concentration-dependence, or kinetics of binding of MccJ25 to the first entity.